

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Appln. No. 10/050,573
Attorney Docket No.: Q66582

REMARKS

Claims 1-12 are all the claims pending in the Application. By this Amendment, Applicant amends claims 2 and 3 to further clarify the invention. In addition, Applicant adds claims 5-12.

I. Preliminary Matters

As a preliminary matter, the Examiner has acknowledged the claim to foreign priority and confirmed that the certified copy of the priority documents was received. In addition, the Examiner indicated acceptance of the Drawings filed on January 18, 2002.

II. Summary of the Office Action

Turning to the merits of the Office Action, the Examiner objected to the title and rejected claims 1-4 under 35 U.S.C. § 102(b).

III. Objection to the Title

The Examiner objected to the title for being non-descriptive. Applicant respectfully requests the withdrawal of this rejection in view of the self-explanatory amendment to the title being made herein.

IV. Prior Art Rejections

With regard to the prior art rejections, claims 1-4 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,144,407 to Mitzutani (hereinafter "Mitzutani"). Applicant respectfully traverses in view of the following comments.

Of the rejected claims, claims 1-3 are independent. The Examiner contends that Mitzutani suggests each feature of independent claims 1-3. These rejections are not supportable

for at least the following reasons. To begin, independent claim 1 recites “moving charges into a plurality of charge transfer paths disposed on both sides along a row of a plurality of light receiving units arranged linearly.” The Examiner appears to equate the light receiving paths on each side of the light receiving units as set forth in claim 1 to the vertical charge transfer area 17 and the charge absorbing area 26 of Mitzutani (see page 2 of the Office Action).

In Mitzutani, the solid-state image pickup device 11 has the light receiving and charge transfer portions. The light receiving areas 16 put the charges to the vertical charge transfer portion 17 and it is from this vertical charge transfer portion 17, the charge is transferred to a charge absorbing area 26 (Figs. 3; col. 7, lines 48 to 63). That is, in Mitzutani, the charge stored in the light receiving areas 16 is read to the vertical charge transfer areas 17 through the charge-reading gate areas 18 driven by the reading gate driving signal which is supplied to the reading gate electrodes EG from a driving signal generator 30 (Fig. 3; col. 8, lines 6 to 12).

Mitzutani further teaches in response to the charge-sweeping driving signal SS, through the vertical charge transfer areas 17 toward the charge absorbing area 26 which is provided on the semiconductor substrate 15 to be opposite to the horizontal charge transfer area 23, so that a charge sweeping operation for sweeping the charge away from the vertical charge transfer areas 17 is performed. The charge swept away from the vertical charge transfer areas 17 by the charge sweeping operation is absorbed by the charge absorbing area 26 (col. 11, lines 32 to 47).

Mitzutani, however, just like in the conventional devices discussed in the background section of the specification, only has one path along the row of the plurality of light receiving units. That is, Mitzutani only teaches one vertical charge transfer area along the row of plurality

of light receiving units. In other words, in Mitzutani, along one row there is only one path, *i.e.*, the vertical charge transfer area 17. The charge absorbing area 26 is not positioned along the row of the light receiving units as the vertical charge transfer area 17. Moreover, the charge absorbing area is not a path for transferring and outputting charges but an area that absorbs charges. In short, Mitzutani teaches that the charge absorbing area 26 absorbs charges swept away from the vertical charge transfer area 17 (col. 11, lines 46 to 49) and does not teach or suggest the charges being transferred and output anywhere.

In summary, the deficiencies of the Mitzutani reference fall to the Examiner's burden to show inherent inclusion of the claim elements. Therefore, for all the above reasons, independent claim 1 is patentable. With respect to claim 2, it recites limitations similar to the limitations argued above with respect to claim 1. Since claim 2 contains features that are similar to the features argued above with respect to claim 1, those arguments are respectfully submitted to apply with equal force here. For at least substantially the same reasons, claim 2 is patentably distinguishable from Mitzutani.

Next, independent claim 3 recites "wherein each of said plurality of light receiving units includes a plurality of segments separated by a potential barrier so that charges stored in said plurality of light receiving units are moved to said plurality of charge transfer paths." The Examiner contends that each light receiving area 16 of Mitzutani is equivalent to a segment of the plurality of light receiving units, as set forth in claim 3 (see page 3 of the Office Action). This position is technically inaccurate for at least the following reasons.

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If, as alleged by the Examiner, Mitzutani's light receiving area 16 is a segment, then Mitzutani fails to teach or suggest a plurality of light receiving units. That is, Mitzutani only teaches a number of light receiving areas but none of these areas are segmented. In other words, in Mitzutani there are no plurality of light receiving area, where each is segmented further. In summary, the deficiencies of the Mitzutani reference fall to the Examiner's burden to show inherent inclusion of the claim elements. Therefore, for all the above reasons, independent claim 3 is patentable. Claim 4 is patentable at least by virtue of its dependency on claim 3.

V. New Claims

In order to provide more varied protection, Applicant adds claims 5-12. Claims 5-12 are patentable at least by virtue of their dependency on claims 1, 2, or 3.


VI. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly invited to contact the undersigned attorney at the telephone number listed below.

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Respectfully submitted,


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